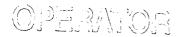
APPLICATION SECTION 401 WATER QUALITY CERTIFICATION

CENTURY MINE COARSE COAL REFUSE DISPOSAL FACILITY SECTIONS 3 & 4, WAYNE TOWNSHIP BELMONT COUNTY, OHIO

Prepared For:

THE OHIO ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF SURFACE WATER
P. O. BOX 1049
COLUMBUS, OHIO 43216-1049



By:

William J. Siplivy, P.E., Inc. 50 Munroe Falls Avenue Munroe Falls, Ohio 44262

January, 2002

0042500

26 January 2002

Ms. Laura Fay
Ohio Environmental Protection Agency
Division of Surface Water, 401 Wetlands Section
122 South Front Street
Columbus, Ohio 43216-1049

Re: Application - Section 401 Water Quality Certification

Dear Ms. Fay:

On behalf of the American Energy Corporation, attached please find four copies of the Application for an OEPA Section 401 Water Quality Certification, relative to the Century mine coarse coal refuse disposal project.

The Application includes a Mitigation Plan for impacting 1.774 acres of wetlands, 7,161 lineal feet of intermittent streams and 2,002 lineal feet of ephemeral streams.

Please feel free to call if there any questions. All correspondence should be directed to:

Mr. Ryan T. Desko, P.E. Senior Mining Engineer American Energy Corporation 43521 Mayhugh Hill Road Beallsville, Ohio 43716

Phone: (740) 926-9152

Respectfully submitted,

William J. Siplivy, P.E., Inc.

William J. Siplivy, P.E., C.P.G.

President

cc: R. Desko

S. Steitler - ODNR Columbus (2 Copies)

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APPLICATION FOR OHIO EPA SECTION 401 WATER QUALITY CERTIFICATION

Effective October 1, 1996 Revised August, 1998

This application must be completed whenever a proposed activity requires an individual Clean Water Act Section 401 Water Quality Certification (Section 401 certification) from Ohio EPA. A Section 401 certification from the State is required to obtain a federal Clean Water Act Section 404 permit from the U.S. Army Corps Engineers, or any other federal permits or licenses for projects that will result in a discharge of dredged or fill material to any waters of the State. To determine whether you need to submit this application to Ohio EPA, contact the U.S. Army Corps of Engineers District Office with jurisdiction over your project, or other federal agencies reviewing your application for a federal permit to discharge dredged or fill material to waters of the State, or an Ohio EPA Section 401 Coordinator at (614) 644-2001.

The Ohio EPA Section 401 Water Quality Certification Program is authorized by Section 401 of the Clean Water Act (33 U.S.C. 1251) and the Ohio Revised Code Section 6111.03(P). Ohio Administrative Code (OAC) Chapter 3745-32 outlines the application process and criteria for decision by the Director of Ohio EPA. In order for Ohio EPA to issue a Section 401 certification, the project must comply with Ohio's Water Quality Standards (OAC 3745-1) and not potentially result in an adverse long-term or short-term impact on water quality. Included in the Water Quality Standards is the Antidegradation Rule (OAC Rule 3745-1-05), effective October 1, 1996, revised October, 1997 and May, 1998. The Rule includes additional application requirements and public participation procedures. Because there is a lowering of water quality associated with every project being reviewed for Section 401 certification, every Section 401 certification applicant must provide the information required in Part 10 (pages 3 and 4) of this application. In addition, applications for projects that will result in discharges of dredged or fill material to wetlands must include a wetland delineation report approved by the Corps of Engineers, a wetland assessment with a proposed assignment of wetland category (ies), official documentation on evaluation of the wetland for threatened or endangered species, and appropriate avoidance, minimization, and mitigation as prescribed in OAC 3745-1-50 to 3745-1-54. Ohio EPA will evaluate the applicant's proposed wetland category assignment and make the final assignment.

Information provided with the application will be used to evaluate the project for certification and is a matter of public record. If the Director determines that the application lacks information necessary to determine whether the applicant has demonstrated the criteria set forth in OAC Rule 3745-32-05(A) and OAC Chapter 3745-1, Ohio-EPA will inform the applicant in writing of the additional information that must be submitted. The application will not be accepted until the application is considered complete by the Section 401 Coordinator. An Ohio EPA Section 401 Coordinator will inform you in writing when your application is determined to be complete.

Please submit the following to "Section 401 Supervisor, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049:

d.____ jurisdiction identified by #_____

e. requires a modified federal permit under______ jurisdiction identified by #_____

Four (4) sets of the completed application form, including the location of the project (preferably on a USGS quadrangle) and 8-1/2 x 11" scaled plan-drawings and sections.

One (1) set of original scaled plan drawings and cross-sections (or good reproducible copies).

(See Application Primer for detailed instructions)

1. The federal permitting agency has determined this project: (check appropriate box and fill in blanks)

a. __X requires an individual 404 permit/401 certification- Public Notice # (if known)______

b. ___ requires a Section 401 certification to be authorized by Nationwide Permit #______

c. requires a modified 404 permit/401 certification for original Public Notice #______

2.	Application number (to be ass	igned by Ohio EPA):			
3a.	Name and address of applican American Energy Corp 43521 Mayhugh Hill I Township Highway 88 Beallsville, Ohio 43 M Signature of Applicant:	poration Road	(6-9152 (Of Oate: 1/21/02	sidence) fice)
4.	Name, address and title of aut	horized agent:	Telephone number	during business hours:	
	N/A		()	(Re	sidence)
			()	(Of	fice)
4a.	4a. Statement of Authorization: I hereby designate and authorize the above-named agent to act in my behalf in the processing of this permit application, and to furnish, upon request, supplemental information in support of the application. N/A				
5.	Signature of Applicant: Location on land where activity exists or is proposed. Indicate coordinates of a fixed reference point at the impact site (if known) and the coordinate system and datum used.				act site (if known) and the
	Address:				
	Sections 3 an	d 4, T-6, R-5, USGS Quad:	Hunter, Ohio		
	Street, Road, Route, and Coordinates, or other descriptive location See attached map, drawing 19.				
	Captina Creek Be	lmont Wayne		Ohio	43716
_	Watershed Cour	nty Township	City	State	Zip Code
6.		or which authorization is sought ns, month and year activity was o		No existing work on the dra	wings.
7.	List all approvals or certifications and denials received from other federal, interstate, state or local agencies for any structures, construction, discharge or other activities described in this application.				
	Issuing Agency Type of	Approval Identification No.	Date of Application	Date of Approval	Date of Denial
	Ohio EPA NPI			Oct 1983	
		urea Application D0425-2 nit to Install Pending (Ponds	Dec. 13, 2001 Dec. 20, 2001	Pending Pending	
8.	,	IE ACTIVITY (fill in info	/		Ba. 8b. 8c & 9)
⊢	Activity: Describe the Overal				
	The proposed project is the expansion of an existing valley-fill coarse coal refuse disposal facility. The expanded facility will be an up-stream extension of the existing refuse disposal area, all of which are located on mine owned property. The new site will be lined with three feet of clay. Upon completion, the site will be capped with two feet of clay and up to two additional feet of earthen material. Collection systems will be installed to: (1) divert groundwater, and (2) collect leachate for treatment, if necessary.				

The purpose is to provide a disposal area for coarse coal refuse generated by the mine's coal cleaning (preparation) plant. The disposal area is needed to sustain mining operations at American Energy Corporation's Century Mine. The proposed site has an estimated disposal life of 7 to 9 years.

8c. Discharge of dredged or fill material: Describe type, quantity of dredged material (in cubic yards), and quantity of fill material (in cubic yards). (OAC 3745-1-05(B)(2)(a))

The refuse (fill) material consists of carbonaceous shale, claystone, limestone, and coarse coal reject. The volume of coarse coal refuse produced annually is estimated to range from 1.5 to 1.8 million cubic yards.

9. Waterbody and location of waterbody or upland where activity exists or is proposed, or location in relation to a stream, lake, wetland, wellhead or water intake (if known). Indicate the distance to, and the name of any receiving stream, if appropriate.

Coarse coal refuse will be placed in an unnamed ravine in the Piney Creek drainage basin. The new disposal facility will be located approximately 1,100 feet up-stream of Piney Creek

10. To address the requirements of the Antidegradation Rule, your application must include a report evaluating the:

- Preferred Design (your project) and Mitigative Techniques
- Minimal Degradation Alternative(s) (scaled-down version(s) of your project) and Mitigative Techniques
- Non-Degradation Alternative(s) (project resulting in avoidance of all waters of the state)

At a minimum, item a) below must be completed for the Preferred Design, the Minimal Degradation Alternative(s), and the Non-Degradation Alternative(s), followed by completion of item b) for each alternative, and so on, until all items have been discussed for each alternative (see Primer for specific instructions). (Application and review requirements appear at OAC 3745-1-05(B)(2), OAC 3745-1-05(C)(1) and OAC 3745-1-54).

- 10a) Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water. (OAC 3745-1-05(B)(2)(b))
- Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation. (OAC 3745-1-05(C)(6)(a, b) and OAC 3745-1-54)

10c)	Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.) (OAC 3745-1-05(C)(6)(h, j-k) and OAC 3745-1-54)		
10d)	For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents. (OAC 3745-1-05(C)(6)(i))		
10e)	To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource. (OAC 3745-1-05(B)(2)(g))		
10f)	Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project. (OAC 3745-01-05(C)(6)(g))		
10g)	Describe any impacts on human health and the overall quality and value of the water resource. (OAC 3745-1-05(C)(6)(c) and OAC 3745-1-54)		
10h)	Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy. (OAC 3745-1-5(B)(2)(e), and OAC 3745-1-05(C)(6)(1))		
10i)	Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans. (OAC 3745-1-05(B)(2)(e,f), and OAC 3745-1-05(C)(6)(e))		
10j)	Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species. (OAC 3745-1-05 (B)(2)(e,f), OAC 3745-1-05 (C)(6)(b) and OAC 3745-1-54)		
10k)	Describe mitigation techniques proposed (except for the Non-Degradation Alternative):		
	Describe proposed Wetland Mitigation (see OAC 3745-1-54 and Primer)		
	Describe proposed Stream, Lake, Pond Mitigation (see Primer)		
-this ap	cation is hereby made for a Section 401 Water Quality Certification. I certify that I am familiar with the information contained in oplication and, to the best of my-knowledge and belief, such information is true, complete and accurate. I further certify that I is the authority to undertake the proposed activities or I am acting as the duly authorized agent of the applicant.		

Signature of Agent

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in Block 3 has been filled out and signed.

Do not send a certification processing fee with this application. The appropriate fee will be assessed when a certification is issued.

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Antidegradation Alternative Analysis

American Energy Corporation Century Mine Wayne Township, Belmont County, Ohio

10A. Provide a description of any construction work, fill or other structures to occur or be placed in or near the streambed. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water. (OAC 3745-1-05 (B)(2)(b)).

PREFERRED ALTERNATIVE

Description of Construction Work, Fill or other Structures:

The project entails construction of a coarse coal refuse disposal facility as a valley fill within an unnamed tributary to Piney Creek. The valley-fill structure construction will begin on the 1050' elevation terrace of the former Allison Mine coal refuse structure.

The site will be developed in three phases. Phases 1 and 2 are intermediate stages that will fill the east and west forks of the tributary to elevations of 1210 feet. Phase 3 will cover both these phases as well as the remaining valley trunk to outslopes of the Allison refuse pile. The ultimate height of the structure will be 324 feet, when measured from the Allison refuse pile toe, at elevation 965 feet to the projected 1288.6 feet maximum crest elevation. The thickness of fill under the maximum crest elevation will be approximately 134 feet. The maximum fill thickness will be 200 feet, occurring where phase 3 overlaps the toe sections of phases 1 and 2.

The coarse coal refuse disposal capacity is 14.3 million cubic yards. The projected landfill area is 112.2 surface acres. The required permit area is 154.4 acres with the inclusion of environmental controls. The estimated project life is 7 to 9 years.

All precipitation runoff from unaffected portions of the water shed will be diverted around the disposal facility. Any precipitation falling within or passing through the coal waste disposal facility will be directed to ponds and treated, if necessary. The ponds will discharge to Piney Creek.

Initial construction includes installing all necessary erosion and sediment controls, excavating sedimentation ponds, clearing and grubbing vegetation, stripping and stockpiling topsoil, construction of groundwater underdrains, constructing diversion ditches, constructing haul roads, placement of a three-foot thick clay liner, and construction of a leachate collector system.

Upon completion of the project, the coal refuse will be capped with two-feet of clay, another two-feet of earthen material, then seeded. The site will be reclaimed in accordance with all applicable rules and regulations of the State of Ohio and the United States Government.

Substances Discharged:

Only fill materials are to be placed below the ordinary highwater mark (OHWM) in the tributary. These materials are composed of unclassified earthen sub-grade used as a foundation and the clay liner.

Cubic Yardage Discharged:

Total linear impact and cubic yardage of fill material to be place below the OHWM for The Preferred Alternative is 7161 lineal feet and 23,870 cubic yards.

MINIMAL DEGRADATION ALTERNATIVE

Description of Construction Work, Fill or other Structures:

The Minimal Degradation Alternative is to backfill coarse coal refuse in the surface mine pits permitted for this site under ODNR Permit D-1159. This method is acceptable to ODNR specific to meeting permitting requirements. This technique is commonly applied throughout the coal fields.

This method would keep valley bottoms untouched. The trade-off is volume. This alternative offers 1.8 million cubic yards of capacity compared to 14.3 million cubic yards in the preferred alternative. The site life under this alternative is approximately one year. A long-term solution is not provided by the Minimal Degradation Alternative.

The disposal area would be reclaimed with a clay cap; soil cover and revegetated to meet ODNR, DMR reclamation requirements, as specified in the Preferred Alternative. .

Substances Discharged:

There will be no fill materials placed below the ordinary highwater mark (OHWM) in the tributary.

Cubic Yardage Discharged:

There is no linear impact or cubic yardage of fill material to be place below the OHWM for the Minimal Degradation Alternative.

NON-DEGRADATION ALTERNATIVE

Description of Construction Work, Fill or other Structures:

This Alternative entails the shipment of coarse coal waste to an off-site solid waste disposal facility. To dispose of 1.8 million cubic yards of coarse coal refuse annually it will require 98,000 truck loads at 25 tons a load. The closest facility permitted large enough to handle this volume is the Harrison County Solid Waste Disposal Facility. This facility is approximately 55 miles north of the wash plant, west of Cadiz, Ohio on State Route 250. No additional construction would be required as a result of this alternative.

Substances Discharged:

No fill or dredge materials will be discharged to the unnamed tributary and its forks.

Cubic Yardage Discharged:

The Minimal Degradation Alternative has no linear impact and cubic yardage of fill material to be place below the OHWM.

10B. Described the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species, important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation. (OAC 3745-1-05 (C)(6)(a, b)) and OAC 3745-1-54)

PREFERRED ALTERNATIVE

Magnitude of Proposed Lowering of Water Quality:

Changes to Aquatic Life and Wildlife Habitat: Approximately 7161 linear feet of intermittent stream, 2002 linear feet of ephemeral stream and 1.774 acres of wetlands will be impacted as a result of this project. This impact will result in the removal of 100% of the aquatic life habitat within these segments and the 100% removal of any potential wildlife habitat associated with their riparian corridor.

<u>Change in Chemical Water Quality</u>: The proposed Preferred Alternative will impact surface water quality in the receiving streams during the early stages of construction. Sediment loads to the drainage system will be increased. The quantity of sediments reaching surface waters will be minimized by directing all runoff through sedimentation ponds.

<u>Changes in Flow Regime</u>: The Preferred Alternative is expected to reduce base flows and peak flows in the downstream section of the unnamed tributary to Piney Creek due to the retention characteristics of the proposed sediment and quality control ponds. Runoff from the project or disturbed areas presently contributing to stream flow will be directed to sediment ponds. However, the tributary, which has intermittent flow during summer months have no downstream users. The tributary discharges into Piney Creek, a tributary of Captina Creek. Since the affected area drained by the unnamed tributary represents a small percentage of the Captina Creek drainage basin, there should not be any recognizable difference in quantity flow in Captina Creek. It is predicted that the proposed operation will not result in any significant adverse impacts on surface water quantity in the area.

Prior to commencing with the construction operation discharge within the impacted stream segments will be diverted around the construction site. The areas adjacent to and the stream channels will be graded with fill placed within the impacted segments in preparation for construction. The stream will no longer function as a stream and the pre-construction flow regime will not be reestablished within the disturbed segments.

The Ohio Department of Natural Resources has no record of rare, threatened, endangered or protected species in the project area (See Wetlands Delineation Report, Section 3.5).

Attached is a Wetlands Verification Report issued by the Corps of Engineers.

MINIMAL DEGRADATION ALTERNATIVE

Magnitude of Proposed Lowering of Water Quality:

<u>Changes to Aquatic Life and Wildlife Habitat</u>: The Minimal Degradation Alternative will have no impact on the aquatic life habitat within the project area.

Change in Chemical Water Quality: The proposed Minimal Degradation Alternative will impact surface water quality in the receiving streams during construction and operation of the facility. Sediment loads to the drainage system will be increased. The quantity of sediments reaching surface waters will be minimized by directing all runoff through sedimentation ponds.

<u>Changes in flow Regime</u>: The Minimal Degradation Alternative is expected to reduce base flows and peak flows to a lesser degree than the preferred alternative in the downstream section of the unnamed tributary to Piney Creek due to the retention characteristics of the proposed sediment and quality control ponds. Runoff from the project or disturbed areas presently contributing to stream flow will be directed to sediment ponds. However, the tributary, which has intermittent flow during summer months have no downstream users. The tributary discharges into Piney Creek, a tributary of Captina Creek. Since the affected area drained by the unnamed tributary represents a small percentage of the Captina Creek drainage basin, there should not be any recognizable difference in quantity flow in Captina Creek. It is predicted that the proposed operation will not result in any significant adverse impacts on surface water quantity in the area.

The Ohio Department of Natural Resources has no record of rare, threatened, endangered or protected species in the project area (See Wetlands Delineation Report, Section 3.5).

NON-DEGRADATION ALTERNATIVE

Magnitude of Proposed Lowering of Water Quality:

<u>Changes to Aquatic Life and Wildlife Habitat</u>: There would be no lowering of water quality by using the Non-Degradation Alternative.

<u>Change in Chemical Water Quality</u>: There are no changes in water quality anticipated as a result of the Non-Degradation Alternative.

<u>Changes in flow Regime</u>: There are no changes in flow regime anticipated as a result of the Non-Degradation Alternative.

10C. Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation. (OAC 3745-1-05 (C)(6)(h, j-k) and OAC 3745-1-54).

PREFERRED ALTERNATIVE

Technical Feasibility:

The proposed project is designed for disposal of coarse coal refuse in an environmentally acceptable manner. The site will be constructed to comply with the rules and regulations of the State of Ohio, Ohio EPA Policies 2.05 and 4.16, and U.S. Mining Safety and Health Administration 30 CFR 77.215 and 77.216. Valley fills are a common and excepted way of disposing of large volumes of coal waste materials and have been technically proven though out the coal bearing regions.

Permanent control measures and facilities include diversion ditches, benching side slopes and establishing vegetative cover over final fill surfaces. Permanent diversion ditches will be constructed to divert runoff from the working area. The east side is protected by the diversion system along the plant road. Control ditches and structural benches will contain runoff from the project area thereby preventing flows from freely discharging over side slopes. Waterways susceptible to erosion will be protected by vegetation or riprap. The final fill surface will be clay capped, covered with soil, seeded and mulched. A permanent stand of grass will be established to mitigate erosion and sedimentation and serve as a wildlife habitat.

Cost Effectiveness:

The site disposal capacity is 14.3 million cubic yards. The site life is approximately 7 to 9 years, depending plant and mine operating variables. Total cost over the project life is approximately \$14 million, which averages approximately \$0.98 a cubic yard or \$0.726 per ton. The incremental clean coal cost is \$0.391 per ton.

Availability:

The topography of the site and most of Belmont County is composed of ridges and valleys. The coarse coal waste disposal area proposed will utilize a narrow, forking valley in an unnamed tributary of Piney Creek. The proposed disposal site is located on Company owned land, adjacent to the west of the preparation plant.

Reliability:

The construction of the disposal site will be under the guidance of the site engineer. A quality contol and quality assurance program will be implemented to monitor the construction of the facility. Completed constructed will be certified by the site engineer.

Groundwater and surface water will be protected through the use of diversion ditches, a clay liner, sedimentation ponds, and temporary erosion and control measures such as hay bales, silt fence and seeding. All control facilities will be maintained for their designed operation to insure adequate performance.

Operation and Maintenance Difficulties:

Routine maintenance will include reseeding, replacing riprap and drains, removal of debris from the site, observations and record keeping. A surveillance of the area will be made immediately following any unusual events such as heavy rains, heavy frost, and abnormal structural behavior. The most important maintenance tasks at these times are the prompt backfilling of erosional scarps and slumps, and the repair and improvement of drainage systems and riprap.

MINIMAL DEGRADATION ALTERNATIVE

Technical Feasibility:

The minimal degradation alternative is an excepted method for the disposal of coarse coal waste. Normally this technique is used in conjunction with a surface mining operation. The technical restrictions of this method would be the ability of the excavation to keep up with the rate of demand.

Cost Effectiveness:

The disposal capacity is 1.8 million cubic yards. The site life is approximately 1 year. Total cost for the project is approximately \$750,000. The unit refuse disposal cost is approximately \$0.42 a cubic yard or \$0.311 per ton. The incremental clean coal cost is \$0.167 per ton. This is the least costly Alternative, however, it does not provide any long-term solutions for disposal of coal refuse from the Century mine.

Availability:

This alternative provides 1.8 million cubic yards of disposal on Company owned property.

Reliability:

This alternative has a high degree of reliability for its one-year life.

Operation and Maintenance Difficulties:

The site would be operated and maintained in the same manner as described in the Preferred Alternative.

NON-DEGRADATION ALTERNATIVE

Technical Feasibility:

Shipment off-site, in this region, involves disposal in another valley. Nothing is really solved by this alternative since the same environmental concerns must be addressed again. Transportation is another factor. To dispose of 1.8 million cubic yards of coarse coal refuse annually will require 98,000 truck loads. The impact to local highways will be significant. There will be much more road traffic, accelerated wear and tear, and greater road hazard to other drivers.

Cost Effectiveness:

Trucking coal refuse to the Harrison County Solid Waste Disposal Facility would cost an estimated \$6.25 per ton. The estimated landfill fee is \$5.00 per ton. Total cost is \$11.25 per ton of refuse. This Alternative will increase the cost of clean coal by \$6.06 per ton, making the mining operation uneconomic. This Alternative is 14 times greater in cost than the Preferred Alternative.

Availability:

Off-site shipments would be made to the Harrison County Solid Waste Disposal Facility, located west of Cadiz, Ohio on Route 250, approximately 55 miles away. There is no additional construction required under this alternative.

Reliability:

Shipments off-site, particularly 55 miles away has its greatest uncertainty during the winter months. Icy roads would limit steady shipment schedules and create added risk to others using the roads.

Operation and Maintenance Difficulties:

Not applicable to this alternative.

10D. For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state of local water quality management planning documents and applicable facility planning documents. (OAC 3745-1-05 (C)(6)(I)).

Not applicable.

10E. To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that may have been specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource. (OAC 3745-1-05 (B)(2)(g)).

PREFERRED ALTERNATIVE

There are no government and/or privately sponsored conservation projects specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource. The property on which the disposal facility is to be sited and the affected water resource are Company owned. Access is restricted to company personnel and/or professionals upon invitation.

MINIMAL DEGRADATION ALTERNATIVE

There are no government and/or privately sponsored conservation projects specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource. The property on which the disposal facility is sited and affected water resource are Company owned. Access is restricted to company personnel and/or professionals upon invitation.

NON-DEGRADATION ALTERNATIVE

There are no known government and/or privately sponsored conservation projects specifically targeted to improve water quality or enhance recreational opportunities on the affected water resource.

10F. Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project. (OAC 3745-1-05 (C)(6)(g)).

PREFERRED ALTERNATIVE

The cost of water pollution controls associated with the project area as follows:

Ponds: \$526,212.

Annual maintenance and operating cost is estimated at \$62,125.

MINIMAL DEGRADATION ALTERNATIVE

The cost of water pollution controls associated with the project area as follows:

Ponds: \$225,000.

Annual maintenance and operating cost is estimated at \$28,900.

NON-DEGRADATION ALTERNATIVE

There are no water pollution controls associated with the non-degradation alternative.

10G. Describe any impacts on human health and the overall quality and value of the water resource. (OAC 3745-1-05 (C)(6)(c) and OAC 3745-1-54).

PREFERRED ALTERNATIVE

Impact to Human Health:

Impacts to Overall Quality of the Water Resource:

There are no substances expected to be discharged in quantities that could impact human health or the environment. Effluent limits will be met for discharge.

MINIMAL DEGRADATION ALTERNATIVE

Impact to Human Health:

Impacts to Overall Quality of the Water Resource:

There are no substances expected to be discharged in quantities that could impact human health or the environment. Effluent limits will be met for discharge.

NON-DEGRADATION ALTERNATIVE

Impact to Human Health:

Impacts to Overall Quality of the Water Resource:

Does not apply

10H. Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and type of jobs created and tax revenues generated and a brief discussion on the condition of the local economy. (OAC 3745-1-05 (B)(2)(e)) and (OAC 3745-1-05 (C)(6)(I)).

General Employment Information

<u>Number and Types of Jobs Created</u>: The American Energy Corporation Century mine will employ 333 people full-time when the mine becomes fully operational in 2003. Among those to be employed include coal miners and administrative staff. The mine has a projected life of 30 years.

<u>State and Local Tax Revenues Generated</u>: The annual payroll will be \$17.5 million. Annual tax revenues to be paid to the federal, state and local municipalities is \$7.3 million.

<u>Brief Description of the Local Economy</u>: The local economy is depressed due to recent closings in the steel and coal mining industries. Unemployment is higher than the national average, but under 10 percent. Studies have shown that for each created mining job, an additional ten (10) supporting jobs are created in the local economy.

PREFERRED ALTERNATIVE

No additional jobs would be created or lost as a result of the Preferred Alternative. The Century mine has or is projected to have the staff, personnel and equipment on site, necessary to implement the proposed project.

MINIMAL DEGRADATION ALTERNATIVE

No additional jobs would be created or lost as a result of the Minimal Degradation Alternative. The Century mine has or is projected to have the staff, personnel and equipment on site, necessary to implement the proposed project.

NON-DEGRADATION ALTERNATIVE

Number and Type of Job Created:

An additional 45 trucks and 135 drivers would be required to implement the Non-degradation Alternative, based on each truck and driver making two (2) round trips per day.

State and Local Tax Generated:

The estimated annual state and local tax generated by 135 truck drivers earning \$40,000 each, is \$216,000.

10l. Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics or other use and enjoyment by humans. (OAC 3745-1-05 (B)(2)(e, f)) and (OAC 3745-1-05 (C)(6)(e)).

PREFERRED ALTERNATIVE

Effects on Social and Economic Benefits Lost:

There are no social and economic benefits lost as a result of the construction of the Preferred Alternative. The impacted stream segments are located on property owned and controlled by American Energy Corporation.

Effects on Commercial and Recreational Use of Water:

There are no commercial and recreational uses lost as a result of the construction of the Preferred Alternative. The impacted stream segments are located on property owned and controlled by American Energy Corporation.

Effects on Recreation, Tourism, Aesthetics or Other Human use and Enjoyment:

There will be no effects on recreation, tourism, aesthetics or other human use and enjoyment as a result of the construction of the Preferred Alternative. The impacted stream segments are located on property owned and controlled by American Energy Corporation.

MINIMAL DEGRADATION ALTERNATIVE

Effects on Social and Economic Benefits Lost:

There are no social and economic benefits lost as a result of the construction of the Minimal Degradation Alternative. The impacted stream segments are located on property owned and controlled by American Energy Corporation.

Effects on Commercial and Recreational Use of Water:

There are no social and economic benefits lost as a result of the construction of the Minimal Degradation Alternative. The impacted stream segments are located on property owned and controlled by American Energy Corporation.

Effects on Recreation, Tourism, Aesthetics or Other Human use and Enjoyment:

There will be no effects on recreation, tourism, aesthetics or other human use and enjoyment as a result of the construction of the Minimal Degradation Alternative. The impacted stream segments are located on property owned and controlled by American Energy Corporation.

NON-DEGRADATION ALTERNATIVE

Effects on Social and Economic Benefits Lost:

There are no social and economic benefits lost as a result of the implementation of the Non-degradation Alternative.

Effects on Commercial and Recreational Use of Water:

There are no effects on commercial and recreational use of the water resource as a result of the implementation of the Non-degradation Alternative.

Effects on Recreation, Tourism, Aesthetics or Other Human use and Enjoyment:

There will be no effects on recreation, tourism, aesthetics or other human use and enjoyment as a result of the implementation of the Non-degradation Alternative.

10J. Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species. (OAC) 3745-1-05 (B)(2)(e, f), (OAC 3745-1-05 (C)(6)(b) and (OAC 3745-1-54).

PREFERRED ALTERNATIVE

Effects on Aquatic Life:

Aquatic life benefits will be lost within the impacted stream segments as a result of the construction of the Preferred Alternative.

Effects on Wildlife:

Wildlife benefits will temporarily be lost with the removal of the forested upland and riparian corridor for the short term but upon completion of the project the area will gain a grassland/prairie habitat. Specific seed plantings are being planned in cooperation with the Ohio Department of Natural Resources. The grass plantings will provide long-term wildlife habitat. Wildlife benefits gained as a result of the Preferred Alternative are the pond constructed within the lower reaches of the watershed.

Effects on Threatened or Endangered Species:

There are no benefits lost or gained as a result of the construction of the Preferred Alternative for threatened or endangered species.

MINIMAL DEGRADATION ALTERNATIVE

Effects on Aquatic Life:

Aquatic life benefits will not be lost as a result of the construction of the Minimal Degradation Alternative.

Effects on Wildlife:

Wildlife benefits will temporarily be lost with the removal of the forested upland and riparian corridor as a result of the construction of the Minimal Degradation Alternative. To minimize this loss, an ODNR approved corridor for the movement of wildlife will be left within the area. Wildlife benefits gained as a result of the Minimal Degradation Alternative are the pond constructed within the lower reaches of the watershed. In addition, upon completion of the project the area will gain a grassland/prairie habitat. Specific seed plantings are being planned in cooperation with the Ohio Department of Natural Resources. The grass plantings will provide long-term wildlife benefits.

Effects on Threatened or Endangered Species:

There are no benefits lost or gained as a result of the construction of the Minimal Degradation Alternative for threatened or endangered species.

NON-DEGRADATION ALTERNATIVE

Effects on Aquatic Life:

There are no aquatic life benefits lost as a result of the non-degradation alternative.

Effects on Wildlife:

Wildlife benefits gained as a result of the Non-degradation Alternative are nominal, if any. The majority of the area is impacted as a result of agriculture, thus the wildlife habitat is limited.

Effects on Threatened or Endangered Species:

There are no benefits lost or gained as a result of the construction of the non-degradation Alternative for threatened or endangered species.

10K. Describe mitigation techniques proposed (except for the non- degradation alternative):

Mitigative Techniques for Each Alternative

Preferred Alternative

Water quality impacts will be mitigated through proper execution of construction, operations maintenance water monitoring and reclamation.

Diversion ditches will be installed to direct runoff from the coarse coal refuse area. Runoff entering the refuse pile and leachate, if any, collected by the underdrain system may be high in iron and low in pH. This drainage will be directed to the sediment pond for treatment, if necessary. If the water meets the NPDES effluent limitations, it will be released to the receiving stream, Piney Creek.

Long-term impacts will be mitigated through the implementation of the reclamation plan.

The proposed facility incorporates the following preventative measures. First, a groundwater

underdrain system will be installed to collect and convey down gradient all seepage beneath the structure. Second, an impervious clay liner will be installed to separate the groundwater underdrain system from the coal refuse. The liner will be three feet thick minimum and compacted to permeability of E-07 or less. Along the valley bottom, the liner will be graded to slope down the valley at existing grades to allow for leachate collection. Third the leachate collection drain will be installed on top of the liner's surface to convey leachate, if any to the toe of the structure where it will drain to a clay lined ponds for possible treatment. Fourth the coal refuse will be compacted to reduce oxidation of the acid producing constituents, mainly pyritic sulphur, and seepage through the refuse material. Fifth, an impervious clay cap will be installed to prevent surface water from migrating into and through the refuse full, thereby elimination or reducing the chance for leachate generation. The surface will be graded to promote immediate drainage. Water will not pond or accumulate on the reclaimed surface.

The impact to wildlife during operations will be minimized as much as possible by limiting the amount of disturbed acreage. The construction of sediment ponds and creation of temporary brush piles throughout the fill process will provide temporary habitat for wildlife and aquatic life. Piney Creek, downstream of the project, will continue to provide a natural habitat for wildlife while the site is operational. Tree lines along the undisturbed sections of the permit area will provide travel lanes and cover for wildlife. Upon final reclamation the seeded areas will provide a good mixture of open areas for food and the natural undisturbed woods and brush lands for cover to promote the successful return of wildlife to the area.

Minimal Degradation Alternative

Water quality impacts will be mitigated through proper execution of construction, operations maintenance water monitoring and reclamation.

Diversion ditches will be installed to direct runoff from the coarse coal refuse area. Runoff entering the refuse pile and leachate, if any, may be high in iron and low in pH. This drainage will be directed to sediment ponds for treatment, if necessary. If the water meets the NPDES effluent limitations, it will be released to the receiving stream, Piney Creek.

Long-term impacts will be mitigated through the implementation of the reclamation plan.

The proposed facility incorporates the following preventative measures. First, an impervious clay liner will be installed in the refuse pits. The liner will be three feet thick minimum and compacted to permeability of E-07 or less. Second, leachate, if any, will be collected in channels that drain into sediment ponds for treatment, if required. Third, the coal refuse will be compacted to reduce oxidation of the acid producing constituents, mainly pyritic sulphur, and seepage through the refuse material. Fourth, an impervious clay cap will be installed to prevent surface water from migrating into and through the refuse full, thereby elimination or reducing the chance for leachate generation. The surface will be graded to promote immediate drainage. Water will not pond or accumulate on the reclaimed surface.

The impact to wildlife during operations will be minimized as much as possible by limiting the amount of disturbed acreage. The construction of sediment ponds and creation of temporary brush piles throughout the fill process will provide temporary habitat for wildlife and aquatic life. Piney Creek, downstream of the project, will continue to provide a natural habitat for wildlife while the site is operational. Tree lines along the undisturbed sections of the permit area will provide travel lanes and cover for wildlife. Upon final reclamation the seeded areas will provide a good mixture of open areas for food and the natural undisturbed woods and brush lands for cover to promote the successful return of wildlife to the area.

CENTURY MINE SURFACE FACILITIES

MITIGATION PLAN

MITIGATION PLAN AMERICAN ENERGY CORPORATION CENTURY MINE

INTRODUCTION:

The surface construction activities planned for this site will result in unavoidable impacts to stream beds and wetlands. The extent of impacts on individual water bodies were set forth in the previous permitting applications for the captioned project.

It is proposed to mitigate both the wetland and stream impacts on property of the mining company at this site and in a manner described subsequently in this document. The mitigation sites are located within the Piney Creek watershed. These mitigation procedures are being proposed because there is no other space available at the site to construct mitigative waterways.

STREAM MITIGATION:

NOTE:

Field construction should be supervised by an individual knowledgeable in the design procedure and in field construction methods. Design values shown on the drawings may need to be adjusted in the field to meet constraints of construction equipment, available materials, time and topography. The design dimensions given on the drawings provide a starting point for determining the geometry of the stream, but they do not represent an end point. Field adjustments in the design must be anticipated.

Stream disturbances occur on the site because of the development of the refuse disposal area necessary to service the site. Streams will be mitigated at a ratio of 1:1. The objective of the mitigation will be to improve on 7160 l.f. of streams which were disturbed by the previously mentioned activities.

The streams are old and well established. They have remained relatively undisturbed for many years. The proposed improvement will consist of enhancement of the riparian zones and berms of Piney Creek and Long Run. The enhancement will be composed of planting accepted species in the already established areas.

Stream Riparian Zones and Berms:

NOTE:

A plant specialist should be consulted to assure establishment of vegetation in stream, wetland, and impoundment areas. The establishment of these areas is critical to the acceptability of the mitigation effort by the regulatory agencies.

A riparian zone will be established between the edge of water and the top the bank where practicable. A berm will be established from the top of the bank for a distance of 2 ½ times the bottom width of the stream or 100 feet, whichever is greater. Bare or sparsely vegetated areas in these zones will be planted with a mixture of trees and shrubs selected from the table below. Trees and shrubs will be interspersed on an 8 foot by 8 foot grid (each plant or plant group will occupy 64 square feet). Plant zones shown in the table are defined as follows:

<u>Plant Zone #1</u> is below the level of the normal waterline to the upper limit of the saturated area kept moist by capillary water movement. This zone includes the greatest potential for periodic inundation and the least moisture stress.

<u>Plant Zone #2</u> is from the upper limit of zone #1 to 2-3 feet from the top of the bank. This area may be subject to rapid drying and greater moisture stress.

<u>Plant Zone #3</u> is an area from 2-3 feet below the top of the bank to a minimum of 30 feet into the flood plain.

Plant Zone	Common Name	Species	Note
1	White Willow	Salix Alba	a
1	Black Willow	Salix Nigra	a
1	Sandbar-Willow	Salix Interior	a
1	Carolina Willow	Salix Caroliniana	a
1	Peach Leaved Willow	Salix Amygadaloides	a
1,2,3	Flowering Dogwood	Cornus Florida	
1,2,3	Green Ash	Fraxinus Pennsylvanica	
1,2,3	Sycamore	Plantanus Occidentalis	a
1,2,3	Bald Cypress	Taxodium Distichum	
1,2	River Birch	Betula Nigra	
1,2,3	Eastern Cottonwood	Populus Deltoides	a
1,2,3	Swamp Cottonwood	Populus Heterophylla	a

Shrubs provide a viable understory for restored areas. Additionally, they provide browse and cover for wildlife and help prevent erosion. Shrub species will be randomly interspersed among tree species. They will be chosen from the following list and planted in groups of three.

Plant Zone	Common Name	Species	Note
1	Bankers Willow	Salix Cottettii	a
1	Purple-osier Willow	Salix Purpurea	a
1	Buttonbush	Cephalanthis Occidetalis	a
1,2,3	Silky Dogwood	Cornus Amomum	
1,2,3	Red-Osier Dogwood	Cornus Stolonifera	a

a. Indicates species suitable for use as dormant wood cuttings, stakes or posts if desired. All species of willow and cottonwood do not require hormone treatment

Grasses and legumes will be planted over the entire riparian and berm sections. The following seed mixture will be sown at the rate of 35 lbs. per acre. The percentage of each seed is shown below:

Perennial Rye Grass 15% Foxtail Millet 15% Red Top 10% Birdsfoot Trefoil 10% Appalow Lespedeza 50%

Areas planted with riparian or berm vegetation will not be cut or mowed in order to encourage the development of volunteer vegetation. Species of trees, shrubs, grasses, and legumes which appear naturally will be allowed to remain in order to enhance the wildlife environment along the stream. for rooting.

WETLAND MITIGATION:

Wetland disturbances occur as previously described. The Ohio EPA has directed that the disturbed wetlands be mitigated at the ratio of $1 \frac{1}{2}$: 1.

The mitigative wetland will be developed in the area of the existing abandoned fresh water pond. This location is shown on the enclosed mapping. Hydrology and vegetation is already established in the area. It is assumed that hydric soils exist or are in the process of developing since this area has been in its current condition for many years.

The water is approximately 6 feet deep at the deepest point. The dam will be lowered and the spillway will be systematically lowered over time until water depths are within the limits recognized as acceptable wetland conditions. The wetland surface area will then be adjusted to provide the required mitigative area (2.66 acres). Wetland planting will then be placed in the newly developed area.

The mitigation area is shown on the mapping and detail drawings included with this document. A section of the Belmont County Highway Map showing the general location of the site is also included. The planned topography, hydrology, soils, and vegetation are all addressed in this section. Planting areas and vegetation lists are included as are monitoring plans and schedules. Corrective measures are also included should the mitigative area not perform as expected.

The new wetland area will be established on land owned by the mining company which has agreed to incorporate deed restrictions which will preserve the mitigative wetland in perpetuity. The following conditions will be incorporated into any deed or other instrument of conveyance which may be written in the future.

"The mitigative wetland and deep water habitat area containing approximately 2.66 acres which exists on the property is a mitigative installation mandated by the Ohio Environmental Protection Agency (1-800-426-6515) and the U.S. Army Corps of Engineers, Pittsburgh District (412-395-7157). The grantee agrees that this area will be preserved in perpetuity; that no disturbances of the mitigative areas of any kind will ever be undertaken without first contacting the regulatory authorities and procuring the proper permits. The grantee further agrees that this condition will be incorporated into any deed or other instrument of conveyance should the property ever be sold or otherwise conveyed or transferred in the future."

The plan is based upon contours and elevations which are present at the site when this document was prepared (winter,2002). It is possible that elevations, contours, and locations may vary slightly from those assumed when mitigation is undertaken. However, basin morphology should remain constant regardless of topographic features.

Wetland Topography:

The site will be graded to provide a wetland area as shown on the enclosures with this document and as described in this commentary. A buffer area with more gentle slopes than other surrounding land will be established at the perimeter of the mitigative wetland area. The purpose of the buffer will be to slow runoff into the wetland and reduce siltation of the wetland basin. This buffer will be planted as described subsequently in the drawings included as part of this attachment. This planting will further enhance the buffering characteristics.

Wetland Hydrology:

The hydrology for the mitigative wetland area will be provided by Long Run. This stream is natural and undisturbed in the areas immediately upstream and downstream of the proposed mitigative wetland. It is also well established in these areas and in the area of the proposed mitigation. It has serviced the fresh water pond for many years. During the period when the water levels in the wetland are being adjusted, the stream bed will also be manipulated so that adequate water is fed into the wetland area while still maintaining flow in the stream. The existing conditions, proposed mitigative areas, and cross-sections are shown on the plans included with this attachment.

It is anticipated that beaver may be present on the site at some time after the completion of mitigation. If this occurs, additional wetland area may be created or the ratio of wetland planting areas may be altered. Beaver control is not part of the mitigation plan. Should they occupy the site at any time after completion of the work, they will be allowed to remain.

Wetland Soils:

It is presumed that wetland soils are either present or are in the process of developing in the proposed wetland area. The area has been present for many years and the shallower ranges have already shown aggressive development of wetland vegetation. This condition should continue to progress after completion of this mitigative work.

Wetland Vegetation:

A planting design has been established for the mitigative area. This plan should provide for a diverse species grouping which will naturally colonize on a time table fitting to the required establishment period. It will also provide browse and cover for a variety of wildlife which can be expected to occupy the site after mitigation is completed. No effort will be made to control natural colonization except to control invasive species as described subsequently in this attachment.

Plant zones have been established for the wetland which will accommodate placement of plants in the best hydrologic conditions conducive to growth of that particular species. All plant stock will be procured from reputable plant suppliers in the area. This should assure that stock is acclimated to the area.

Four plant zones have been established for the wetland area. Zone #1 is deep, permanent water; Zone #2 is permanent intermediate depth water. Zone #3 is shallow water which extends into the area adjacent but above the waterline. Zone #4 is water depths ranging from shallow to intermediate and includes areas in the shallower ranges which may be periodically dry. The island area is included in Plant Zones #3 & #4. Plants selected for each of the various zones are listed in the Plant List on Page -M-7- of this document.

Any of the following conifers may be used in riparian areas where called for in the drawings included with this Mitigation Plan:

Austrian Pine (Pinus Nigra Arnold)

Eastern Pine (Pinus Strobus L.)

Red Pine (Pinus Resinosa Ait)

Scotch Pine (Pinus Sylvestris)

Jack Pine (Pinus Banksiana Lamb)

Pitch Pine (Pinus Rigida Mill)

Hardwoods may be planted in the buffer areas outside the flood plains of the stream reaches developed. These species may be chosen from the list for stream riparian zones on Page -M-2-.

These conifers and hardwood species can be planted as seedlings; however establishment of viable root systems with plants of this size is difficult and time consuming. They require close observation and maintenance. Survival required by the regulatory agencies and outlined subsequently in this document is more assured if containerized plants between 4' and 6' in height are used.

The berm and riparian zone around the wetland will be seeded with Red Top Grass and Meadow Fescue. Islands will be seeded with the same mixture. The mixture will, in both cases, be 50/50 at a rate of 35 lbs/acre. Clusters of shrubs will be established on banks and islands. Shrubs will be planted on 8 foot centers in clusters of three. Shrub species will include Alder, Wax Myrtle, Black Willow, and Elderberry. These shrubs are frequently found growing together and can tolerate the same or similar conditions. Black Willow will be used to stabilize the channels leading into and away from the mitigative wetland areas.

Wetland Plant List

<u>Plant</u>	Zones	Stock
Water Smartweed (Polygonium Amphibium)	1	Seedling, 8 foot centers
Slender Pondweed (Potamogeton Pectinatis)	1	Rhizome, 8 foot centers
Common Cattail (Typha Latifolia)	2	Rhizome, 8 foot centers
Spatterdock (Nuphar Luteum)	2	Bare root, 8 foot centers
Soft Stem Bullrush (Scirpus Tabernaemontii)	2, 4	Rhizome, 8 foot centers
Arrowhead (Sagittaria Latifolia)	2, 3, 4	Tuber, 8 foot centers
Smart Weed (Polygonum Hydropiperoides	2, 3, 4	Plug, 8 foot centers
Soft Rush (Juncus Effusis)	3,4	Rhizome, 8 foot centers
Long Hair Sedge (Carex Comosa)	3	Seed, ½ lb/acre
Red Top Grass (Agrostis Alba)	3	Seed, 5 lbs/acre
Pennsylvania Smartweed (Polygonum Pennsylvanicum)	3	Plugs, 8 foot centers

MONITORING PLAN:

A monitoring program will be implemented following establishment of the mitigative areas. The monitoring program will document hydrology, vegetation, and soils where applicable in accordance with the U.S. Army Corps of Engineers three parameter approach. The <u>General Wetland Mitigation Monitoring Requirements</u> prescribed by the Ohio Environmental Protection Agency will be followed. A copy of the official description of this program is included for reference on Page -M-10- of this attachment. The stream and impoundment monitoring programs will document the Q.H.E.I. score for the stream, the hydrology, and the vegetation for the impoundments. Monitoring will identify problems and potential problems and develop remedies as required.

In addition to the reporting procedure required by the general wetland monitoring document mentioned in the previous paragraph, reports will be submitted to the Pittsburgh District of the U.S. Army Corps of Engineers, 1000 Liberty Avenue, Pittsburgh, PA 15222-4186. The report will be based upon monitoring completed during the growing season. These reports will be submitted annually for a period of five years following completion of reclamation. They will be submitted on or before August 31 for the year of review. Reports will be based upon wetland sampling points described in the Ohio E.P.A. policy previously referenced; upon single sampling points for each deep water habitat; and upon two sampling points for each stream. These points will be identified in the field so that the same points can be used for each periodic observation. The reports will also include photographs which will be taken from the same point of view for each report. These viewpoints will also be identified in the field so that they can be used on a continuing basis.

Survival rates expected for all mitigative vegetation during the five year establishment period are:

Year 1	50%
Year 2	60%
Year 3	70%
Year 4	80%
Year 5	90%

Water sampling will be incorporated into the wetland monitoring plan. This will also be done in accordance with the Ohio E.P.A. guidelines previously referenced. Stream water sampling will also be carried out in accordance with Ohio Department of Natural Resources requirements.

Observation and photo view point identification markers will be established so that conformance with the requirements of the guidelines can be assured. These markers will consist of steel fence posts driven into the ground. Both sets of points will be identified and numbered so that continuity between observation and reporting periods will be assured.

Wetland, stream, and impoundment development will also be monitored by the Division of Mines and Reclamation personnel as part of the reclamation monitoring which this organization normally carries on.

MITIGATION CONTINGENCY PLAN:

Should it become evident that the *Mitigation Plan* has failed, steps will be taken to remedy the failure. In the event that vegetation is deemed inadequate, replanting of the significant bare spots will be undertaken. Any replanting will occur during the same growing period that the deficiencies are found except that if it becomes necessary to replant trees and shrubs, replanting will be done during the following growing season (replanting of areas created by the removal of invasive species will be covered subsequently.)

Should the integrity of the channels deteriorate to the point that significant erosion is taking place, the erosion will be repaired. Rock riprap may be incorporated. If this is required, then rock will be adequately sized in accordance with current practice. Should it become apparent that the original design is inadequate, then new specifications will be developed and implemented.

If invasive species such as Reed Canary Grass, Purple Loosestrife, or Giant Reed develop in the mitigative area, corrective measures will be taken. These measures will include either spraying or physical removal or both depending upon the extent of the contamination and the season of discovery.

If spraying is the chosen method, then applicators certified by the State of Ohio Department of Agriculture, Division of Plant Industry will be retained to apply herbicides. This will assure that herbicide will not affect nearby acceptable growth. If physical removal is deemed appropriate, then care will be taken to minimize distribution of seed into surrounding areas. If possible, removal will be undertaken during the dormant period. This will help assure that distribution of the seed into adjacent areas will be minimized. This removal may have to occur during several growing seasons until seed distribution from previous seasons is eliminated from the growing cycle. Bare spots left by the corrective action will be replanted following the appropriate time period (this period depends upon the type of herbicide used.)

Ohio Environmental Protection Agency General Wetland Mitigation Monitoring Requirements

Annual water quality, hydrology, and vegetation surveys shall be conducted. A report containing these data shall be submitted to Ohio E.P.A. for each of five consecutive years following completion of mitigation construction. The first annual report is due to Ohio E.P.A. by December 31 of the year following completion of mitigation construction. All subsequent reports shall be submitted by December 31 of each of the five monitoring years. The reports shall contain, at a minimum, the following information:

Water Chemistry Monitoring: A grab sample shall be collected in May of each monitoring year in each wetland mitigation area. The samples shall be analyzed for ammonia, nitrates, nitrite, carbon, total sulfates, total iron, total manganese, specific conductivity, pH, turbidity, total suspended solids heavy metals and biochemical oxygen demand.

Hydrology Monitoring: Water level data shall be collected in May and late August of each monitoring year.

Ground water levels shall be measured in the absence of inundated conditions.

<u>Vegetation Monitoring</u>: The location and name of each plant community type within the mitigation area and buffer area shall be marked on a scaled drawing or scaled aerial photograph (base map) and named.

A representative observation point shall be selected in each plant community type in each distinct wetland mitigation area. This shall be a point which best represents the characteristics of the entire plant community. The observation points shall be marked on the base map.

The dominant plant species shall be visually determined in each vegetation layer of each community type, and the specific names of these species shall be included in the report. Dominant species are those species which have the greatest relative basal area (woody overstory), greatest height (woody overstory), greatest percentage of aerial coverage (herbaceous understory), and/or greatest number of stems (woody vines).

Each sample point shall be photo documented from the same position and angle during July of each monitoring year.

The applicant shall arrange an on-site mitigation meeting with Ohio E.P.A. on the third year after wetland mitigation construction. The purpose of this inspection is to determine if the mitigation project has been constructed in accordance with the agreement between the applicant an Ohio E.P.A.. If necessary, Ohio E.P.A. may make recommendations to improve the wetland. The applicant is responsible for undertaking any reasonable modification identified by Ohio E.P.A..

The applicant is responsible for ensuring the wetland is not filled, drained, or otherwise converted to upland. If the property is sold, the deed shall ensure that the wetland will not be filled, drained, or otherwise converted to upland.

Ephemeral Stream Mitigation

The proposed refuse disposal will affect 2,002 lineal feet of ephemeral streams. These are to be mitigated at a ratio of 2:1. American Energy Corporation proposes to mitigate this via Conservation Easement, as shown on attached Drawing No. 19. The proposed total length of streams is no less than 4,004 lineal feet at a width of 200 feet.

ATTACHMENT #1

CORRESPONDENCE FROM THE
DIVISION OF WILDLIFE
AND THE DIVISION OF NATURAL AREAS AND PRESERVES.



Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Wildlife Michael J. Budzik, Chief 1840 Belcher Drive Columbus, OH 43224-1300 Phone: (614) 265-6300

January 3, 2002

Donald Brafford Jack A. Hamilton & Associates, Inc. Box 471, 342 High Street Flushing, OH 43977

Subject:

Information request

Century Mine Surface facilities

Belmont County, Ohio

Dear Mr. Bradford:

This letter is in response to your information request on the above referenced project in Belmont County. The aquatic habitat of the area highlighted on the map appears to be limited to two intermittent streams. Based on the information you provided, ODNR, Division of Wildlife (DOW) does not have records of any "significant aquatic life" nor threatened or endangered wildlife species in close proximity of this site.

If additional information or clarification is needed please feel free to contact my staff person Bob Fletcher @ 614-265-6308.

Sincerely,

Randy Sanders

Assistant Administrator

Fish Management & Research



DATA REQUEST

OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF NATURAL AREAS AND PRESERVES HERITAGE DATA SERVICES 1889 FOUNTAIN SQUARE COURT, BUILDING F-1 COLUMBUS, OHIO 43224 PHONE: 614-265-6453: FAX: 614-267-3096

INSTRUCTIONS:

Please fill out both sides of this data request form, sign it and return it to the address or fax number listed above along with: (1) a letter formally requesting data and describing your project, and (2) a map detailing the boundaries of your study area. A photocopy from the pertinent portion of a USGS 7.5 minute topographic map is preferred but other maps are acceptable. Our turnaround time is two weeks, although we can often respond more quickly.

FEES:

Fees are determined by the amount of time it takes to complete your project. The charge is \$25.00 per ½ hour with a ½ hour minimum. We can perform a data search manually or by computer. The Heritage Data Services staff will determine the most cost-efficient method of doing your search. A cost estimate can be provided upon request. Unless otherwise specified, an invoice will accompany the data services response.

This request is being submitted by: 🕱 fax 🗆 mail 🗆 both					
Date: 12001					
Your Agency/Organization: Lock A HANILTON & ASSEC. 5., 110 C.					
Your Name/Title: DON BRAFFERD					
Address. 342 HICH 57, Box 471					
City/State/Zip: FLUSHING, GHIC 43977					
Phone/Fax: 140 - 908 - 4941					
Project Name/Number: CENTURY MINE SURFOLE FACILITIES					
Project is located on the following USGS 7.5 minute topographic map(s): HUNTER					
QUADRANCLE					
If there is a program or contracting agency requiring this information, please give the name and phone number of a contact person:					
OH EPS & COUR					

DNR 5203

The Natural Heritage Data Babelow. Check the appropriat				l features listed
PLANTS: □ Federal Status □ State Legal State □ Rare (non-legal State) K All of the above	atus Only il status)	ANIMALS:	□ Federal Status □ State Legal St □ Rare (non-legal All of the above	atus Only al status)
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The area you want searched:	□ study area plu □ study area plu	ıs ½ mile radius	·	
How will the information be use				
TO OBTOIN NEC	LESSARY	PERMITTI	<i>-</i>	
The information supplied above Heritage Data Base will not be p Division of Natural Areas and F	oublished without Preserves as the s	prior written perm	sission and without terial.	

ATTACHMENT # 2
PLANT PROTECTION

PLANT PROTECTION:

Planting which is completed to meet requirements of this *Mitigation Plan* should be protected against damages which may be caused by deer, beaver, or other varmints which can damage plants. This damage could have a devastating impact on survival rates which are required under this permitting.

Several methods of protection against these potential damages are available. One is a wireless deer fence. Another is a plastic sleeve which can be placed around the plant. Information on these two products is attached. Other alternatives are the use of coyote urine or other commercial products available for this application. These products and applications all require periodic maintenance or re-application

Jack A. Hamilton & Associates, Inc. is not a plant specialist or horticulturist. An expert in these matters should be contacted prior to and during the establishment of mitigative growing areas. The attached information is provided as a courtesy to our clients.

MIT PLAN.

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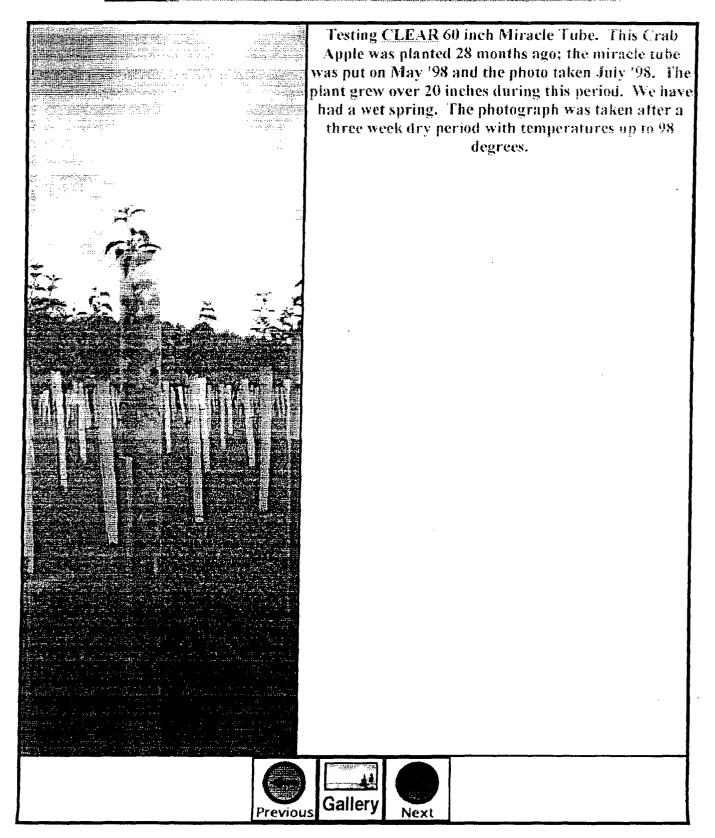
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Tree Pro



January, 1999

New Wireless Fence An End to Deer Encroa

By LORI SMITHBERGER Staff Writer

While deer population is at an all time high, a new product promises a method of peaceful co-existence, at least where your garden and lawn are concerned.

The Wireless Deer Fence is a new patented product that guarantees deer will avoid your yard and garden. The new product has been field tested for the last year and a half with nearly 100 percent effectiveness.

"After three and a half years of research and development, I am now ready to present the Wireless Deer Fence," said veterinarian and fence creator Keith Betzen. "The Wireless Deer Fence has been field tested for over two and a half years, and it has proven amazingly effective. It is sold with a complete satisfaction guarantee."

The operation of the deer fence, which functions using scented oils and two AA batteries, is rooted in deer psychology, initially relying on the animal's curious nature and then on its ability to learn and fear, explained Betzen. "The Wireless Deer Fence consists of field units which are positioned in yards and gardens such, that when deer are attracted by the perfumed oil to touch the units, the fence delivers a harmless shock which frightens the deer from the area and instantly trains them never to return."

This system is a very productive method of eliminating deer problems. the deer who is initially shocked, but guarantees satisfaction.

because deer are heard animals, this single shock to one animal will and accidental victims. frighten other nearby deer from the area, Betzen said.

This does not mean that the units are causing the animal any great harm. While the Wireless Deer Fence will deliver an uncomfortable shock, the amount of energy involved is too low s a very low amperage, a short curt path and a very short discharge nuon, producing an effect similar at of static electricity from carpet. standard electric fences, the Deer Fence takes approxi-1 minutes to recharge, so chance for repeated shocks,

fe for both target animals

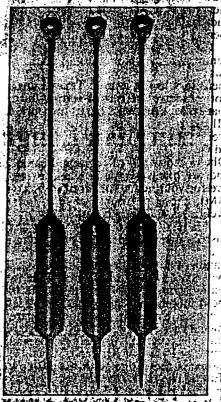


Photo provided The Wireless Deer Fence, a new ::product that promises deer will a quickly learn to avoid your lawn in and garden, utilizes essential oils and mild electric shock as a means ::: of control. The new wonder product currently has two U.S. patents because it not only installs fear in and three patents pending, and in

The Wireless Deer Fence is a non-ut toxic, environmentally safe product in that can aid in the conservation of people's property. The device operates safely efficiently and silently on two AA batteries. It is weather proof. and low maintenance, requiring new to initiate any problems other than batteries once every two years and nomentary discomfort. The product oil replenishment once a month; explained Betzen.

The deer fence has been tested only on relatively small plots of land and is recommended for areas no exceeding 3/4 of an acre.

For information on this new solu tion to the area's excessive deer pop ulation, call Betzen Manufacturing at (800) 927-5356

WIRELESS DEER FENCE

You are here > Home > FAQs

FAQs

Question: How large of an area can I protect with the Wireless Deer Fence?

Answer: The Wireless Deer Fence has only been tested on relatively small areas and so recommended for areas of about 3/4 of an acre or less.

Question: How far apart can I put the Wireless Deer Fence units?

Answer: If the units are positioned too far apart, the chances are increased that the deer between them. Depending on how many things that you grow that deer like, the Wireles should be placed between 10 and 30 feet apart.

Question: The instructions are vague about how many Wireless Deer Fence units that I

Answer: It is difficult to be exact about how many are needed because there are so man variables include; how many deer are in your area, how many plants do you grow that d are located, the existence of other barriers to limit entry paths into the area, the size of t want to protect and how quickly do you want to train all the local deer. Example 1: In n that is overloaded with deer, where I have many things that deer like, that is way out in almost no existing barriers to deer entry, and that is about 3/4 of an acre in size I have b (6 packages) and have had 100% successful protection from deer. Example 2: In the yar testimonial in this website, there are 21 units (7 packages) in an area that is slightly mo acre and where there are about 80 types of hostas and many other things that deer like. In no-deer-damage for almost 2 years.

Question: I am worried about my dog being hurt by these devices.

Answer: The Wireless Deer Fence delivers a harmless shock and will not harm your do not to touch the devices. The scent used in the Wireless Deer Fence is designed to attract attract dogs. If your dog touches one of the devices it will quickly learn to leave them all

Question: How do I maintain the units in my yard?

Answer: About once a month you should replenish the scented oil in the device. At this make sure that the device is clean of any spiders, in sects or debris that may be on the d you should test the units by shorting across the electrodes and observing for a small electrodes are that the units do not become overgrown with vegetation. It may be a good idea to no occasionally to better protect vulnerable plants as they emerge.

Question: The felt in my units has become discolored, what is the problem?

Answer: The discoloration that you see with time is expected and it will not affect the p Wireless Deer Fence.

Question: How many units do I need?

Answer: The number required depends on what you grow, the size of your yard and the number area.

Small yard	3-6 units	1-2 packages
Medium yard	9-12 units	3-4 packages
Large yard	15-18 units	5-6 packages

Question: How safe is the the Wireless Deer Fence?

Answer: The Wireless Deer Fence delivers a harmless but uncomfortable shock. The amount by the Wireless Deer Fence is far too low to cause any damage or problems other than a mome Each unit has a brightly colored cap as a warning not to touch. Children should be warned about small children should be closely supervised around the devices. The Wireless Deer Fence can from an area when children or pets are present.

Question: How does weather affect the Wireless Deer Fence?

Answer: The Wireless Deer Fence may be discharged by heavy rainfall, or by ice and snow. I less active during periods of rain or snow, and they feed less during these times. The Wireless recharged in about 12 minutes after the rain stops. To be effective in the winter, the Wireless E kept clear of snow and ice. It will not harm the device to be buried under snow and ice and it wi battery life.

Question: Is the Wireless Deer Fence Guaranteed?

Answer: Absolutely. The Wireless Deer Fence will provide satisfactory deer control or you car we will immediately refund your purchase price plus the postage to return the devices to us. If a be defective within one year of purchase, we will replace it with two units. Our liability is limited purchase price and return postage or replacement of the device as stated. All other liabilities a

Additional Questions? Click here.

Back to top



WIRELESS DEER FENCE

You are here > Home > Contact Us

Contact Us

The Wireless Door Lence

I am very interested to hear about your experiences with the Wireless Deer Fence. I will respond by E-mail, fax or by mail to all questions and comments that you send. Also, your questions and comments may be posted on the FAQ page so that everyone can benefit from your experiences.

Keith M. Betzen, D.M.V.

E-mail: keith@wirelessdeerfence.com

Fax: (812) 335-8242

US Mail: PO Box 5604 Bloomington, IN 47407-5604



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WIRELESS DEER FENCE

You are here > Home > How It

How it Works

Product Description | The Deer Problem | Safety | Deer Training | Weather | Competitors' Products

The operation of the Wireless Deer Fence is based on deer behavior. Deer are creatures live in a specific area with set travel paths. Once shocked by the Wireless Deer Fence, the their living area and change their travel paths to avoid the area they associate with the neg experience. Deer are also herd animals. When one deer is shocked, the violent reaction sideer nearby and they are also frightened from the area. When one deer is too frightened to area, other deer will avoid it as well. Fear is a powerful motivator, especially for deer.

Product highlights

- Operates silently and efficiently with extended battery life—two years with 2 AA batteries
- Very economical. Protects an area for less than other alternatives.
- Easy to deploy. Easy to remove. Easy to maintain.
- Monthly maintenance simply involves refreshing attractant oil.
- Sweet-smelling, perfumed oil-used as an attractant. Smells great!
- · Field tested for more than two years with outstanding results.
- The Wireless Deer Fence works!

The Wireless Deer Fence works by affecting the deer's brain, not by containing its body. A instantly trained by a single contact with a Wireless Deer Fence unit, a deer thereafter ass discomfort of the shock, not only with the area, but also with the smell of the perfumed oil a device. The sense of smell is very basic and the association of the discomfort of the shock of the perfumed oil will lead to a profound learning experience for the deer and it will not rearea when it smells the devices.

Wireless Deer Fence Satisfaction Guarantee:

The Wireless Deer Fence will provide satisfactory deer control or you can return it to us ar immediately refund your purchase price plus the postage to return the devices to us. If any found to be defective within one year of purchase, we will replace it with two units. Our list to refund of the purchase price and return postage or replacement of the device as stated. liabilities are excluded.



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WIRELESS DEER FENCE

I would like to order the satisfaction-guaranteed Wireless Deer Fence patented deer control system.

Product Description:

Each package contains three (3) units. A one 1 oz. bottle of attractant oil (enough to last a year) is included in each package. Two AA batteries per unit are required. BATTERIES NOT INCLUDED.

Price: \$59.95

Four ways to order

Place your order online and pay by check Order online or credit card. To begin the process, click on here.

Phone (800) 927-5356

Fax (812) 335-8242

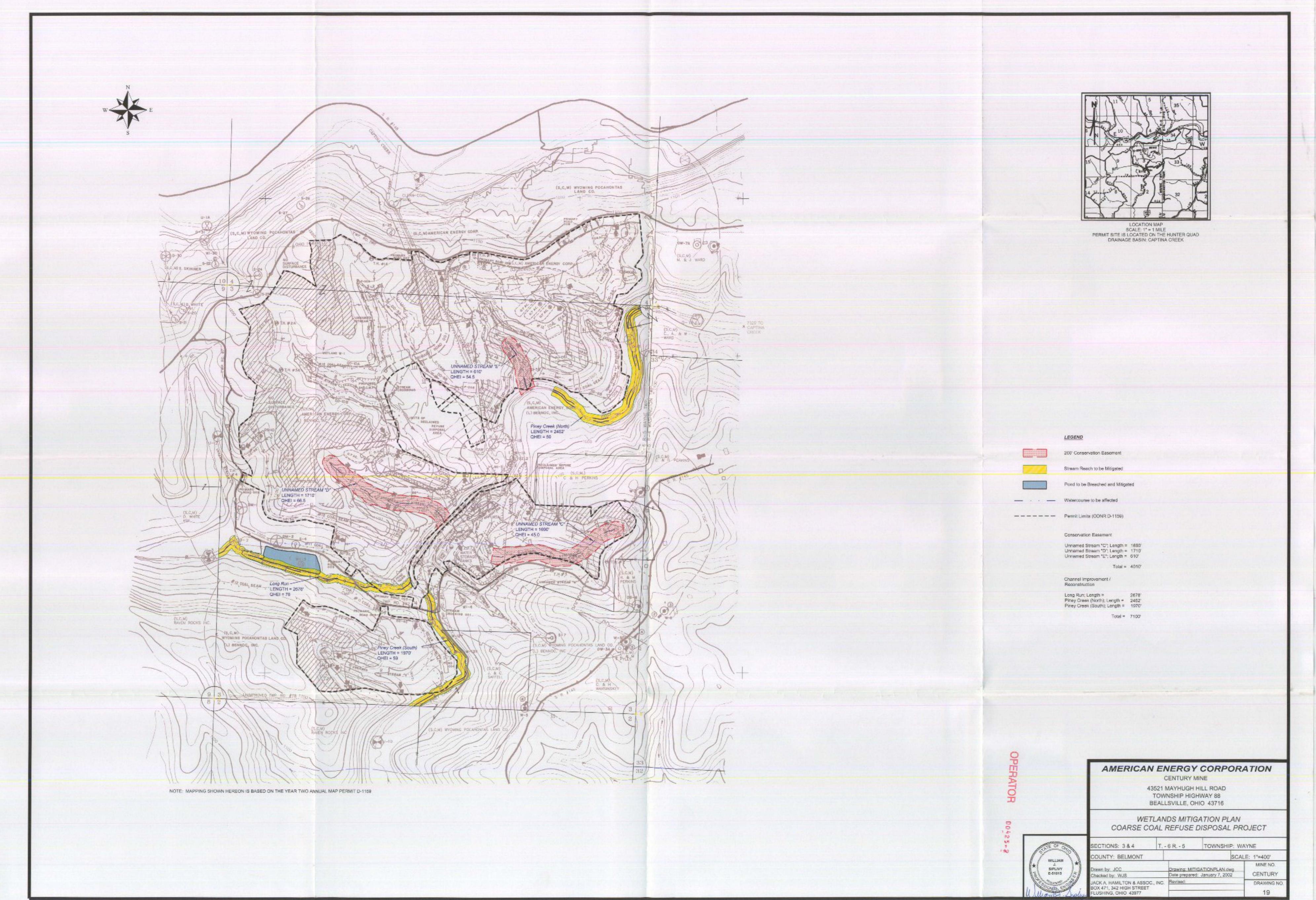
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Sept 2002





1. Long Run Pond. 29 January 2002 Downstream view, emergency spillway on right (west) side.



2. Long Run Pond. 29 January 2002 Pond embankment, east to west view. Pond depth 2 to 3 feet.



3. Long Run Pond. 29 January 2002 Downstream view from headwaters (north) end. Cattails abundant in headwaters.



4. Long Run Pond. 29 January 2002 Upstream view from east bank.



5. Long Run Pond. 29 January 2002 Upstream view from pond embankment.



6. Long Run Pond. 29 January 2002 Upstream view of headwaters from east bank.



7. Long Run Pond. 29 January 2002 Headwaters section. Water depth 6 to 12 inches.



8. Long Run Pond. 29 January 2002 Headwaters section. Cattails dominant plant species.